Weather or Not ?

National Weather Service, Los Angeles/Oxnard

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INSIDE THIS ISSUE:

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Fire Weather and the IMET Program

by Rich Thompson

When wildfires break out, the current and forecast weather becomes one of the primary concerns of firefighters. As the weather changes, so does a fire's behavior and spread. So, how exactly do firefighters obtain the latest weather conditions and forecasts? Through a NWS-trained Incident Meteorologist (IMET).

The IMET is a specially trained NWS forecaster that reports to the fire base camp and provides on-site weather support for the fire-fighting effort. The program, which began in 1916, has grown into a cadre of between 75 and 80 certified men and women all across the country. The IMET program is actually an All-Hazards program, with IMETs providing weather support to not only wildfires but also HAZMAT incidents, natural disaster recovery, and even certain special events, such as the Hurricane Katrina recovery and Democratic National Convention. Emergency officials can request an IMET at any time, and one will report on-scene within 24 hours. With extensive training in fire behavior, HAZMAT, and general meteorology, any IMET is able to report to an incident country-wide, providing superior weather support for emergency operations.

Thompson taking humidity measurements in the field

Given the mobility required to respond to an incident quickly, the IMET has a small but powerful package of equipment to help produce their forecasts. The All-Hazards Meteorological Response System (AMRS) consists of a laptop computer with numerous fire-related programs, a printer and a small satellite dish (INMARSAT, short for International Maritime Satellite), allowing the IMET to get up and running very quickly after reporting to an incident. With the AMRS system, the IMET can efficiently analyze various computer models to make their forecasts. Along with weather forecast models, current weather observations are very important to the IMET. In more unpopulated areas, weather observations can be very sparse. To help fill in these observation gaps on an incident, an IMET can order a FireRAWS, a portable weather observation station that reports weather conditions 24 hours a day. With the FireRAWS, the IMET can keep tabs on current and past weather trends in key locations at the incident.

On an incident, the IMET is involved with many different activities, the most important of which are the daily weather briefings to the firefighters. There are two types of weather briefings that IMETs conduct: Operational and Planning. The Operational Briefing is a weather briefing provided to the firefighters going out to the fire

(Continued on page 2)

Office Comings and Goings

By Jamie Meier

We would like to introduce you to the newest addition to our office, Hydrology SCEP student Jamie Stern. Jamie joins us in the midst of a graduate program in Hydrology at Cal State University Northridge. Jamie currently holds a Bachelor's Degree from the University of Southern California. In addition to her hydro-interests, Jamie is a certified weather observer at the Van Nuys airport, and enjoys storm chasing in the midwest.

Next time you talk to Jamie on the phone, say "Hi!" and welcome her to the office!

The IMET Program

by Rich Thompson

(Continued from page 1)

line. It provides the firefighters with the latest weather forecast (temperatures, winds, relative humidity, etc.) for their operational shift. The Planning Briefing is a weather briefing provided to the Incident Command Team (the people running the incident) in order to make plans to fight the wildfire in the future. Any significant weather changes within the 2 to 5 day period can greatly impact the tactics used by the Incident Command Team. Along with these briefings, the IMET can issue spot weather forecasts for particular sections of the fire as well as provide weather input to burnout operations. During the larger and more significant incidents, IMETs can also conduct numerous media interviews both on-air and in print. Essentially, the IMET is the main source for weather information on an incident.

The IMET program provides an important resource to the emergency management community. On just about any incident, the weather is the most variable element that emergency responders encounter. A sudden change in the weather can result in significant safety risks for everyone near the incident. The IMET, working closely with the local NWS office, can keep the emergency responders abreast of the latest weather conditions. With this invaluable information, the safety of all crews can be monitored very closely.

What really happened with the weather *last* year? Check out our 2008-2009 Water Year In Review, written by Lead Forecaster Dave Bruno!

http://www.wrh.noaa.gov/lox/archive/pns_2008-

The 2009 Fire Weather Season

by Dave Gomberg

The 2009 Fire Season is off to a quick start, as the week of August 25th-August 31st proved to be very active in Southern California. A long duration heat wave combined with single digit humidities and critically dry fuels brought a series of significant fires to the region. The Station Fire burned over 160,000 acres of the Angeles National Forest, making it the largest fire in L. A. County history.

The remainder of the 2009 Fire Season has the potential to be very active across Southern California as long term drought conditions have already brought critically dry fuel conditions to the region. Live fuel moisture readings have already reached the critical thresholds that are typically observed in October and November. With the onset of the Santa Ana wind season right around the corner, warm and dry conditions will likely trigger additional fire activity across the southland.

The combination of dry fuels and critical weather conditions leads to the issuance of Red Flag Warnings, which are most frequently issued during the fall months. A Red Flag Warning implies that conditions are favorable for extreme fire behavior. For much of Southern California, there are four different Red Flag Critieria, each of which assumes
sufficiently dry fuel conditions.

1) Relative humidity of 15 percent or less with either sustained winds 25 mph or greater or frequent gusts 35 mph or greater (duration of 6 hours or more).
2) Relative humidity of 10 percent or less for an extended period of time (duration ≥ 10 hours).
3) Widespread and/or significant dry lightning.
4) Other – based on coordination with Predictive Services in Riverside or local agencies.

Typically, Red Flag Warnings are issued up to 24 hours in advance of a critical event in order to give affected agencies sufficient time for staffing and resource considerations. Prior to the issuance of the Red Flag Warning product, there will often be a Fire Weather Watch issued, highlighting the potential for critical fire weather conditions. In addition, outlook information is often given 3 to 5 days ahead of a major event in the form of the Area Forecast Discussions, Special Weather Statements, and other outlook products.

Mill Creek RAWS, after the Station Fire

From Your Spotter Coordinator, Curt Kaplan

Hello Spotters! I want to first thank all of you who have sent in timely spotter reports and for taking our calls soliciting information about weather conditions in your area. There are now nearly 900 spotters within our warning area, including LA, Ventura, Santa Barbara and San Luis Obispo Counties. I want to remind all of you that we appreciate your spotter calls and they are very important to us in the warning decision process. Please continue to make phone calls. Feel free to email me (see last page) if you have any questions about the spotter program, or if you're missing your spotter number.

It has been relatively dry over the past 4 years and we are due for a wet winter. While our reservoirs need the rain, due to the recent fires across portions of Southern and Central California, too much rain could lead to debris flow issues. One of the main concerns this fall through spring will be the recent Station Fire area in Los Angeles County. It will not take much rain to trigger debris flows within the burn area and adjacent valley foothills below. If anyone you know lives near or below the burn areas, I would encourage them to become spotters for the NWS by training online and taking a short test. Upon completion, I will send them detailed instructions on calling in spotter reports, as well as their own Spotter ID #. The online course can be found at:

http://www.wrh.noaa.gov/lox/spotter/course/

In other news, in June, new criteria was established to determine what is considered "severe hail." In the past, hail measuring ¾" diameter (dime or penny sized) was considered severe. The new criteria is 1" diameter (nickel sized) or higher. Here at the office, we still appreciate reports for ALL size of hail, but especially would like to know if you are receiving ¾" hail or larger. Finally, you will likely begin to see a new product issued by the NWS this fall. It is a "Significant Weather Advisory". This will highlight storms that are not expected to meet "severe" criteria, but are strong enough to warrant something more than just a "Nowcast".

Once again, thanks for your continued participation in the spotter program. It is greatly appreciated by everyone here at the office!

California Drought- The Facts

By Eric Boldt

The drought in California continues to worsen as we move into the fall months with no significant rainfall in sight. Water restrictions have become more common from the rural areas to west coast cities. How did we get to this point and where do we go from here?

The NWS, along with other organizations, collaborate weekly on the drought conditions across the U.S. to produce drought monitor graphics, available on the Internet at:

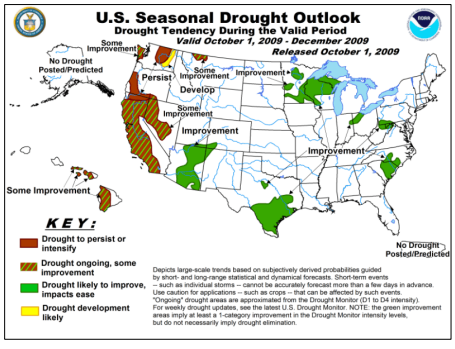
http://drought.unl.edu/dm/monitor.html

The severe drought conditions have expanded from covering 17 percent of the state last year at this time, to over 46 percent today (as of Oct 13, 2009). There is no universal definition of when a drought begins or ends. Impacts of drought are typically felt first by those most dependent on annual rainfall—ranchers engaged in dryland grazing, rural residents relying on local wells, or small water systems lacking a reliable water source. Drought impacts increase with the length of a drought, as carryover supplies in reservoirs are depleted and water levels in ground water basins decline.

The last three years have yielded well below normal rainfall totals across the state. In fact, 8 of the last 11 years have seen mostly below normal rainfall, a major factor in the severity of the current drought. It is also no coincidence that the last 10 years have been the warmest on record, globally. Water storage in state reservoirs has been hampered by the lack of runoff and increased evaporation. Remarkably, the Colorado River system, which provides water supply to many areas of southern California has diminished storage, but no shortages are expected.

Where do we go from here? Could there be help on the way for California's drought situation? Drought takes many years to gradually impact water supply and usage as we read about earlier. It also takes several years to come back from severe drought conditions. One wet rainy season could put a dent in the drought across the state, but it will not abruptly end it. Several years of normal to above normal rainfall will eventually saturate deeper soil layers and fill our stream and reservoir systems.

We could begin to see improvements to our drought with the return of El Niño during the 2009-10 winter season. This warming of the equatorial Pacific waters is beginning to develop and will be in full swing during our rainy season this upcoming winter. However, not all El Niño's are the same. Since 1950 when scientists began monitoring for El Niño we have only recorded six strong events, which have all resulted in above normal rainfall for southern California. The latest El Niño conditions do not match the strength of the 1997-98 El Niño at this stage, so a weaker episode is likely to occur this year. None the less, a moderate El Niño could bring at least normal rainfall across southern California which would be twice the amount we received last year. Keep your fingers crossed for a stormy winter!



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Spotter Line: 800-524-6120
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Spotter Program Coordinator: Curt Kaplan
E-mail: Curt.Kaplan@noaa.gov

Also, if we don't already have your email on file, send a quick note to Curt Kaplan, so you can receive the latest updates!

What to Report?

Remember to please keep calls short with the information given below, as well as specific times and locations of reports, and a reference to the nearest city/town (if possible). There are many spotters who call at the same time. This helps all calls get through in a timely manner.

Flooding/Debris Flows:
- Rainfall Intensity: How much is falling over a specific period?
- Flooding or Debris Flows that are threatening life/property, or are disrupting traffic.
- Describe the flooding:
  - water depth
  - time it began and ended

Winter Weather:
- Amount, rate and time of new snow accumulations.
- Elevation of snow level
- Icing of roads or road closures
- Very low temperatures:
  - Coast: 35 degrees or lower
  - Valleys: 30 degrees or lower
  - Deserts: 20 degrees or lower
- Significant wind chill

Fog:
- Report visibilities less than or equal to 1/4 mile

Wind:
- Report winds of 30 mph or more
- Speed of winds (sustained or gusts)

Extreme Heat:
- Report for these temperature thresholds:
  - Coast: 95 degrees or higher
  - Valleys: 105 degrees or higher
  - Deserts: 115 degrees or higher

Thunderstorms:
- Estimated location, duration, speed and direction of movement
- Any hail (size, accumulation, etc)
  - 1/4" = pea size
  - 1/2" = marble size
  - 3/4" = penny size
  - 1" = quarter size
  - 1 3/4" = golf ball size
- Wind speeds and gusts
- Rainfall rate and amount
- If lightning strikes any object

Surf:
- Report when surf is 6 feet or greater
- Any flooding or damage caused by high tides and/or high surf

Tornadoes:
- Funnel clouds, waterspouts or any rotating clouds
- Estimated location, duration, speed and direction or movement

Damage or Injuries:
- Please report any confirmed weather-related damage, injuries, or deaths.

Call Toll-Free
24-hours a day:
1-800-524-6120